

What is claimed is:

1. A process for controlling operations in a cell for producing aluminum by electrolysis of alumina wherein said cell comprises a chamber containing a molten electrolyte comprising cryolite and alumina, said electrolyte being at least partially covered by a solid crust, said process comprising

- a) establishing a standard rate of addition of aluminum fluoride to said electrolyte,
- b) establishing a target temperature for a duct carrying offgas from said chamber,
- c) measuring an actual temperature in said duct, and
- d) in response to the actual temperature measured in step (c), performing at least one of:

- 1) when the actual temperature is greater than the target temperature, inspecting said crust for a crust hole and when a crust hole is observed repairing it, and

- 2) varying an actual rate of addition of aluminum fluoride to said electrolyte in response to the actual temperature measured in step (c), by increasing said actual rate of aluminum fluoride addition above the standard rate when the actual temperature is greater than the target temperature and by reducing said actual rate below the standard rate when the actual temperature is less than the target temperature.

2. The process of claim 1 further comprising
- e) repeating steps (c) and (d).

3. The process of claim 1 wherein step (d)(2) comprises adding aluminum fluoride to said electrolyte at about the standard rate when said actual temperature is about equal to the target temperature.

4. The process of claim 1 comprising performing step (d)(1) when the actual temperature is greater than the target temperature by more than a preselected limit.

5. The process of claim 1 comprising performing step (d)(2) when the actual temperature deviates from the target temperature by more than a preselected limit.

6. The process of claim 1 further comprising passing a electric current through said electrolyte, thereby to produce aluminum in said cell.

7. A process for controlling operations in a plurality of electrolytic cells as described in claim 1, comprising

- f) performing steps (a), (b), and (c) in each said cells,
- g) transmitting an actual temperature measured in step (c) from each said cells to a control panel displaying said actual temperature of each said cells, and
- h) performing step (d) on any of said cells in which said actual temperature deviates from said target temperature by more than a preselected limit.

8. The process of claim 7 further comprising passing an electric current between an anode and a cathode in each said cells, thereby to produce aluminum in each said cells.